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## ABSTRACT OF THE DISCLOSURE

Styryl dyes and compositions which exhibit superior two-photon absorption cross-sections and are useful in two-photon pumped cavity lasing, two-photon pumped upconversion lasing, optical power limiting, optical power stabilization, optical signal reshaping, and infrared beam detection and indication are disclosed. Methods for killing cells and viruses using a photosensitizer and a two-photon upconverting dye are also described. These methods are especially useful to kill cells and viruses in biological materials, such as in photodynamic therapy of tumors and cancers or blood purification protocols.

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